



Blood Moon – Luna Rossa

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Piazza Prestia, Ali Terme (Messina), Italy

This work was done as a private venture and not in the author's capacity as an employee of the Jet Propulsion Laboratory, California Institute of Technology.



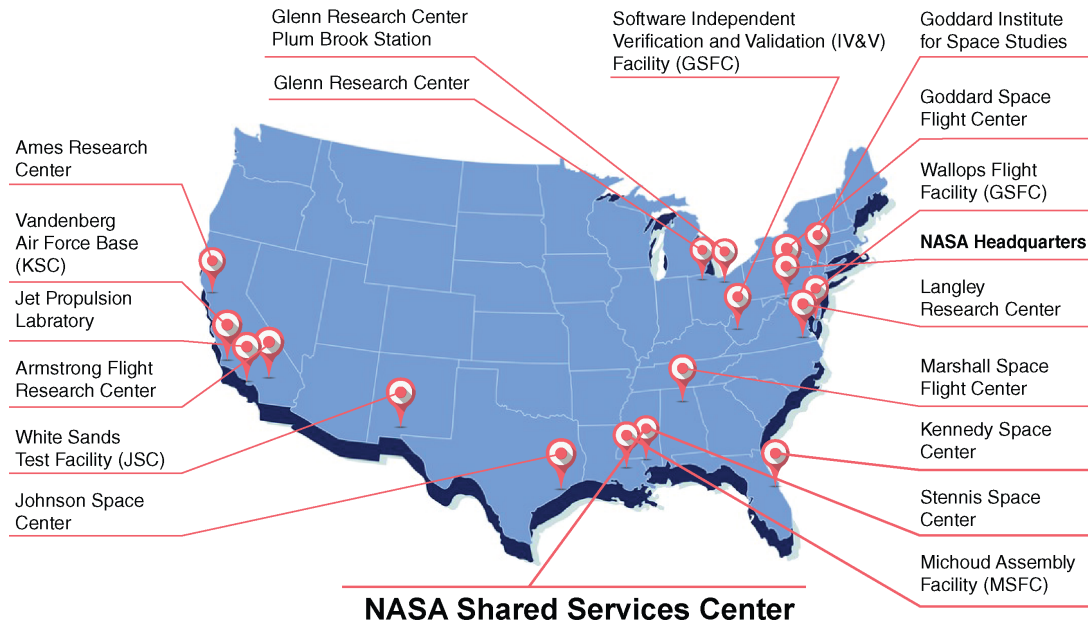
Jet Propulsion Laboratory
California Institute of Technology

JPL is part of NASA and Caltech



- Federally-funded (NASA-owned) Research and Development Center (FFRDC)
- University Operated (Caltech)
- \$2.3B Business Base
- 6,000 Employees
- 167 Acres (includes 12 acres leased for parking)
- 139 Buildings; 36 Trailers
- 673,000 Net Square Feet of Office Space
- 906,000 Net Square Feet of Non-Office Space (e.g., Labs)

NASA Centers & Facilities



End-to-End JPL Capabilities Needed to Implement Missions



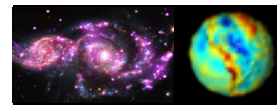
Project Formulation - Team X



Mission Design



Mars Rovers



Scientific Research



Large Structures-SRTM



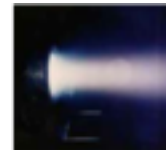
Real Time Operations



Environmental
Test

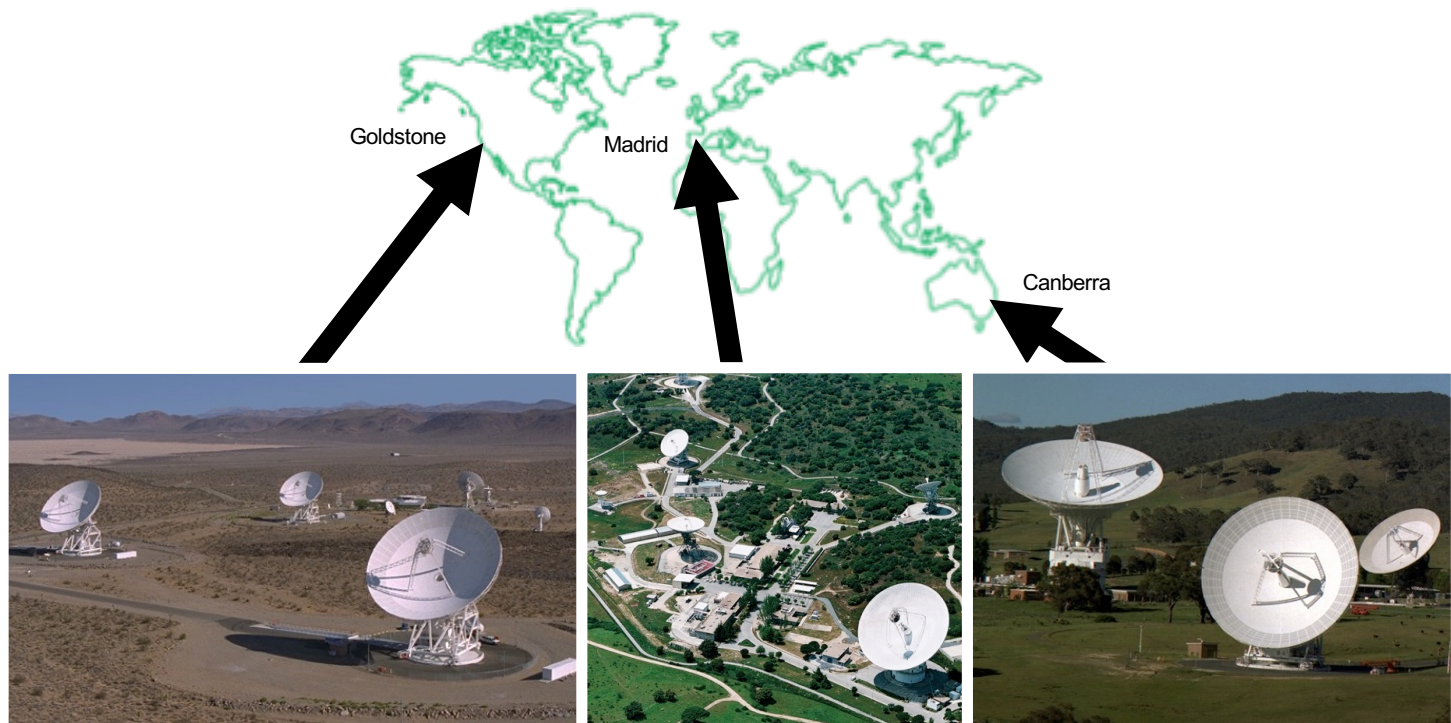


Integration and
Test



Spacecraft Development

Deep Space Network (DSN)



From Caltech students testing rockets to exploring the planets in our lifetime



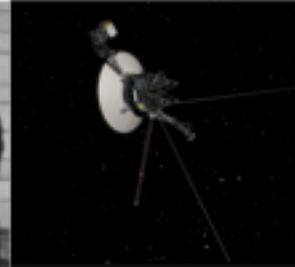
Caltech students (1930s)



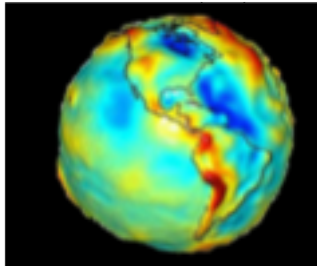
Merlin (1940s)



Explorer 1 (1958)



Voyager 1 & 2 (1977–present)



Earth Science
(1978–now)



Mars Exploration Rovers
(2004–present)

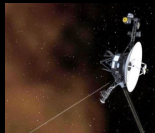


Spitzer Space Telescope
(2004–present)



Exoplanet Exploration
(2009–present)

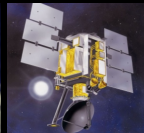
19 Spacecraft and 11 Instruments Across the Solar System and Beyond



Two Voyagers (1977)



Cassini (1997)



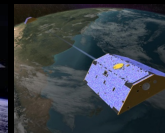
QuikSCAT (1999)



Mars Odyssey (2001)



Jason 2 (2008)



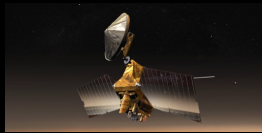
GRACE (2002)



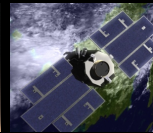
Opportunity (2003)



Spitzer (2003)



Mars Reconnaissance Orbiter (2005)



CloudSat (2006)



Dawn (2007)



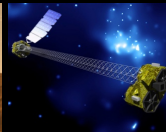
NEOWISE (2009)



Juno (2011)



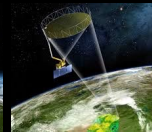
Curiosity (2011)



NuSTAR (2012)



OCO-2 (2014)



SMAP (2015)



Jason 3 (2016)

Instruments

Earth Science

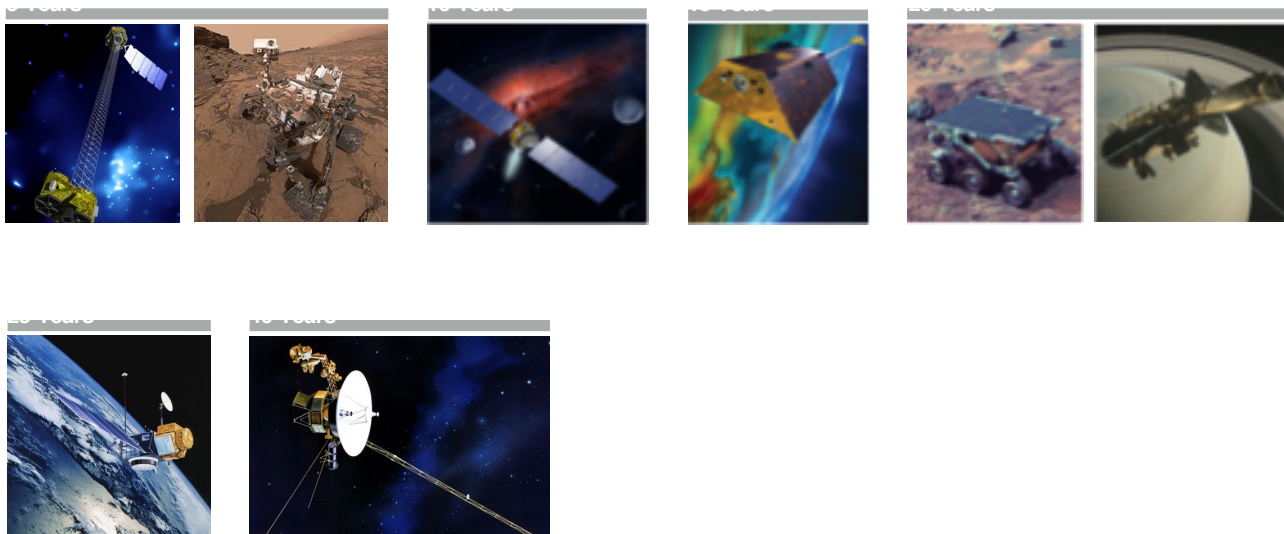
• MISR (1999) • AIRS (2002) • TES (2004) • MLS (2004) • ASTER (2009) • OPALS (2014) • RapidScat (2014)

Planetary and AstroPhysics

• MARSIS (2003) • MIRO (2004) • Diviner (2004)
• Cold Atom Laboratory (2017)



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